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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,376	03/16/2001	David Smith	0321.65200	6440

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EXAMINER

LEE, BENNY T

ART UNIT PAPER NUMBER

2817

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCK

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 14 April 2003 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire three (3) month(s), three from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449 | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-43 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☒ Claim 42 (renumbered) is allowed.
4. ☒ Claims 1-5; 23-26, 30, 31; 37-39; 43 are rejected.
5. ☒ Claims 6-16, 17-22 (renumbered); 27-29, 32-36; 40, 41 are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. These drawings are: ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction, filed 14 April 2003, has been ☒ approved. ☐ disapproved (see explanation). How the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received.
☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

SN 811376

Art Unit: 2817

The disclosure is objected to because of the following informalities: Page 1, line 10, note that "119" should be rewritten as --119(e)--. In the replacement paragraph to page 21, line 2, second line therein, note that "r the dimension" should be rephrased as --r is the radial dimension-- for a proper characterization. Page 24, line 22, note that in replacement equation (7), " w_{2f} " should correctly be -- w_f^2 --. Page 27, line 11, note the "(1, 0) (0, 1) and (1, 1) directions of incidence" remains vague in meaning and needs further clarification. Note that reference labels (w, c, g, d) still need to be described relative to Fig. 5(a) and reference labels (~~x~~, y, z) need to be described relative to Fig. 5 (b). Furthermore, newly added Figs. 7 and 8 need a detail description in the specification (including describing any reference labels associated therewith).

Appropriate correction is required.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the scattering defect (cl 36) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The negative permittivity medium being "superconductive" (cl 2) is not disclosed by the specification. It should be noted that what the specification discloses is that it is

Art Unit: 2817

the “conductive element” and not the “negative permittivity medium” which is “superconductive”.

Clarification is needed.

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 17-23, 43 have been renumbered claims 16-22, 42.

Claims 2, 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, note that it is unclear whether the “elements forming both the negative permittivity/permeability composite medium” being “superconductive” is proper in view of the apparent contradictory specification description in which the “conductive elements” (and not the composite medium) which are “superconductive”.

In claims 43, note that “the adiabatic absorption” remains vague and indefinite.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 2817

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by the Smith et al paper (of record).

With respect to claims 1, 3-5, the Smith et al paper discloses that it is possible to combine negative permittivity and a negative permeability mediums to realize a "left-handed" composite medium (e.g. see description bridging pages 3, 4 and left hand column at page 1 in Smith et al) over a band of frequencies.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23-26, 30, 31; 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Pendry et al paper in view of the Smith et al paper (both of record).

Art Unit: 2817

With respect to claims 23-26, Pendry et al discloses in Fig. 13 thereof, an array of split disk resonators, but does not disclose such split disk resonators as being a part of a “left-handed” composite medium.

As described above, Smith et al discloses that such split disk resonators can be configured as a negative permeability medium associated with a negative permittivity medium (i.e. substrate) to realize a “left-handed” composite medium.

Accordingly, it would have been obvious to have modified the split disk array of Pendry et al to have been a negative permittivity/permeability composite “left-handed” medium such as taught by Smith et al. Such modification would have imparted the advantageous properties of a “left-handed” medium to the analogous art split-disk array in Pendry et al thereby suggesting the obviousness of such a modification. Regarding claims 30, 31, 37-39, the above combination meets these claims except for the conducting path (i.e. wire) adjacent each slit disk resonator.

As disclosed by Smith et al (figs. 2C, 2D), a split disk resonator includes a conductive wire extending adjacent thereto to affect the frequency band gap of the composite “left-handed” medium.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have further modified the above combination to have included conductive wires as taught by Smith et al. Such a modification would have imparted the advantageous benefit of affecting the band gap of the array in the combination, thereby suggesting the obviousness of such a combination.

Art Unit: 2817

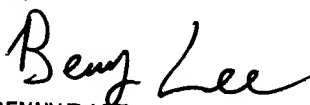
Claims 2; 43 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 6-16, renumbered 17-22; 27-29, 32-37, 40, 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 42 (renumbered) is allowed.

Applicant's arguments with respect to claims 1-43 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-4902.


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817
B LEE/pj

07/24/03